Ambient CO levels shall be monitored during the test period for all appliances. If ambient levels exceed 35 ppm, turn off the appliance immediately and make appropriate repair recommendations according to the charts provided.

Spillage and Draft Tests

Spillage and draft tests must be completed for all natural draft space heating systems and water heaters. Spillage and draft must first be tested under worst-case conditions (see procedure below) and then repeated for natural conditions.

When a chimney is shared by multiple appliances the appliance with the smallest Btu input rating shall be tested first and remaining appliances tested in order of increasing input rate.

Induced draft heating systems shall be checked for spillage at the base of the chimney liner or flue. If a chimney is shared between and induced draft heating system and a natural draft water heater, spillage shall be checked at the water heater draft diverter.

Vent draft pressure shall be measured at steady-state operating conditions for all natural draft heating and hot water appliances. Draft test location should be approximately 2' downstream of the appliance draft diverter. The test hole must be sealed with an appropriate plug after the test. Acceptable draft test results are shown below:

Acceptable Draft Test Ranges

Outside Temperature (degree F)	Draft Pressure Standard (Pa)
<10	-2.5
10-90	-2.5 + (T_out / 40)
>90	-.05

Most appliances will spill upon startup with a cold chimney. Document the amount of time it takes for spillage to stop and a positive draft to be established. Any appliance that continues to spill flue gases beyond the time limits established in the chart below has failed the spillage test.

Acceptable Appliance Spillage Periods

Appliance Type	Spillage Test Period (minutes)
Water Heater, Gravity Furnace, Boiler	3.0
Space Heater	2.0
Forced Air Furnace	1.0

The worst-case depressurization test is configured by determining the largest combustion appliance zone depressurization due to the combined effects of door position, exhaust appliance operation, and air handler fan operation. A base pressure must be measured with all fans off and doors open. The worst-case depressurization is the pressure difference between worst-case and the base pressure.

Default Window Values

Frame Type	Glazing Type	U-Value	SHGC	U-Value with low e	SHGC with low e
Wood	Single	.90	.65	NA	NA
	Single w/ Storm	.49	.71	NA	NA
	Double	.49	.58	.39	.45
	Triple	.39	.53	.30	.45
Vinyl	Double	.46	.57	.36	.45
	Triple	.36	.52	.36	.45
Metal	Single	1.31	.80	NA	NA
	Double	.87	.73	NA	NA
Metal w/ Thermal Break	Double	.65	.66	.53	.52
	Triple	.53	.6	.43	.52

Combustion Safety and Carbon Monoxide Protection

A preliminary and post-installation safety inspection of all combustion appliances must be completed whenever changes to the building envelope and/or heating systems are part of the work scope. This inspection includes all of the following tests: carbon monoxide (CO) measurement at each appliance, draft measurement and spillage evaluation for atmospherically vented appliances, and worst-case negative pressure measurement of the combustion appliance zone (CAZ). Combustion safety test results must be acted upon according to the Combustion Safety Action Level table.

Carbon Monoxide Tests

CO shall be measured in the throat or flue of the appliance using a digital gauge and measured in parts per million (ppm).

Do not drill holes in flues for power vented or sealed combustion units. Instead, measure CO at the exterior outlet of the flue and proceed with appropriate actions according to the CO limits identified in the Combustion Safety Action Level table.

For all combustion appliances, CO shall be measured at steady-state operating conditions.

With the exception of unvented gas or propane cooking appliances, CO must be tested under normal draft conditions and should be tested under mild down-draft conditions.

For gas ovens, CO shall be measured at steady state (usually after 5-10 minutes of operation) at the highest setting. When measuring CO on gas ovens, make sure to turn on the exhaust hood and open a window.

Use the following chart to determine effective R-values for batt insulation installed in attics:

Effective R-values for Batt Insulation*

Measured Batt Thickness (inches)	"Good" Effective R-value (2.5 per inch)	"Fair" Effective R-value (1.8 per inch)	"Poor" Effective R-value (0.7 per inch)
0	0	0	0
1	3	2	1
2	5	4	1.5
3	8	5	2
4	10	7	3
5	13	9	3.5
6	15	11	4
7	18	13	5
8	20	14	5.5
9	23	16	6
10	25	18	7
11	28	20	8
12	30	22	8.5

1. *Measure the insulation thickness.*
2. *Determine the condition of the installation using the following criteria:*
   - ✓ *Good – No gaps or other imperfections*
   - ✓ *Fair – Gaps over 2.5% of the insulated area. (This equals 3/8 inch space along a 14.5 inch batt.)*
   - ✓ *Poor – Gaps over 5% of the insulated area. (This equals ¾ inch space along a 14.5 inch batt.)*
3. *Look up the effective R-value of the installed insulation using the condition and measured [illegible]hes.*

**Derived from ASHRAE document "Heat Transmission Coefficients for Walls, Roofs, Ceilings, and Floors" 1996*

Default Values for Windows

Where NFRC numbers are not available, use the following chart to estimate the U-value and Solar Heat Gain Coefficient (SHGC) for windows and glazed areas of doors. If there is not a label etched on the glass identifying the presence of a low-e coating, this can be verified using a spectrally selective metering device. The values shown below are only estimates. They do not account for all possible window configurations and variations due to airspace thickness, insulated frames, mullions, etc. Since U-values can vary greatly depending on the window type (double-hung, casement, fixed) even within the same manufacturer's model line, it is strongly recommended that NFRC ratings are used whenever the windows are appropriately labeled.

- Windows and doors must be measured and assigned appropriate R-values consistent with the material type and the ratings established by the National Fenestration Rating Council (NFRC). NFRC numbers are stamped on the metal spacer on most double-glazed (or better) units. This number may be looked up in the NFRC guide to determine the precise U-value and Solar Heat Gain Coefficient (SHGC).

Default Values for Insulation

When manufacturer's rated R-values for insulation are not available, use the chart below to estimate the R-value per inch for the installed product.

Typical Insulation R-values

Insulation Type	R-value per inch	Typical Applications
Cellulose, loose fill	3.7	Attic Floor
Cellulose, high density	3.2	Walls, Enclosed Cavities, Framing Transitions
Fiberglass, batts	3.0	Basement Ceiling, Open Stud Walls, Attic Floor
Fiberglass, loose fill	2.8	Attic Floor, Walls (existing)
Fiberglass, loose fill, fluffed below manufacturer's standards	uncertain	Do not install, or correct by blowing with higher density
Rockwool	3.0	Attic Floor, Walls, Basement Ceiling (can be loose or batts)
Vermiculite	2.7	Attic Floor
Poly-isocyanurate, rigid board	7.0	Foundation Walls, Attic Access Doors
Polystyrene, expanded rigid board	4.0	Foundation Walls, Sill Plate
Polystyrene, extruded rigid board	5.0	Foundation Walls, Sub-Slab, Sill Plate
Low Density Urethane, sprayed foam	3.7	Attics, Walls (new construction); Sill Plate, Band Joist, Framing Transitions
Urethane, sprayed foam	6.0	Attics, Walls (new construction); Sill Plate, Band Joist, Framing Transitions
Urea Formaldehyde Foam	4.0	Attics, Walls (existing)

A blower door test must be completed before and after installation of any of the following measures:

- Attic insulation, in order to quantify improvements to the air barrier between the attic and the living space.
- Enclosed cavity insulation representing an area greater than 15% of the total building shell area.
- Air sealing
- Sealing of ductwork located outside the building envelope or significant duct modifications within the building envelope.

Fires in woodstoves and/or fireplaces must be fully extinguished prior to performing a blower door test. Pressurization tests are not recommended under these conditions due to the fire safety risks.

If the measured CFM50 is less than the Building Airflow Standard (BAS), mechanical ventilation must be recommended or installed according to the following standards:

Condition	Action
BAS > final CFM50 > (0.7 x BAS)	Mechanical ventilation rated for continuous operation must be *recommended* to the customer as part of the work scope. System must be sized to make up the difference between the BAS and the final CFM50.
(0.7 x BAS) > final CFM50	Mechanical ventilation rated for continuous operation must be *installed* as part of the work scope. System must be sized to provide 100% of the ventilation requirement by mechanical means.

Recommended or installed mechanical ventilation must be designed appropriately to provide adequate air exchange to meet the occupancy ventilation requirements provided by ASHRAE 62-89.

Building Evaluation

For load and savings calculations, building components must be measured and area and volume calculations must be accurate +/- 10%. For use in load and savings calculations the following criteria for building component evaluations:

- R-values of installed insulation shall be determined based on an actual measurement of the insulation depth and the R-value per inch for that product.
- Voids in insulation must be accounted for by determining the net square footage of uninsulated area and recording it as a separate component of the building.
- Gaps between batt insulation and framing must be accounted for by determining the effective R-value for the insulation using the Effective R-value for Batt Insulation Chart provided below.

Building Airflow

Whenever changes to the building shell requiring a blower door test are part of the work scope, a Building Airflow Standard must be calculated for the home according to the air exchange requirements provided by ASHRAE standard 62-89. Actual occupancy of the building must be used when calculating the Building Airtightness Standard. An example of the calculation is shown below:

Minimum Airflow Standard Example Calculation (ASHRAE 62-89)

BUILDING DATA
Living Space Area = 1500 sqft
Basement Area = 700 sqft
# of Occupants = 4
# of Stories Above Grade= 2
Location = Albany, NY

Step 1: Calculate the Ventilation Required for the Building

AIRFLOW(b) = 0.35 x volume / 60
volume = 8 x (1500 + 700) = 17600 cubic feet
AIRFLOW(b) = 0.35 x 17600 / 60
= 102 cfm

Step 2: Calculate the Ventilation Required for the People

AIRFLOW(p) = 15 x occupants
AIRFLOW(p) = 15 x 4
= 60 cfm

Step 3: Using the Higher Airflow Requirement, Convert to CFM50

MINIMUM_CFM50 = AIRFLOW x N
Where N is the LBL conversion factor (see chart)
MINIMUM_CFM50 = 102 x 15.4 = 1570 CFM50

N-Factors for New York State

Number of Stories	N-factor
1	19
1.5	16.8
2	15.4
2.5	14.4
3	13.7

The following are the minimum required health and safety diagnostics and specifications for Technician I level certification. Minimum health and safety requirements apply to all jobs with work related to energy efficiency and/or indoor air quality performed by BPI accredited firms.

Minimum Health and Safety Requirements
(Technician I: Auditor)

(refer to main text for detailed descriptions and applications of the standards below)

- When air sealing, enclosed cavity insulation representing 15% or more of the total building shell area, or sealing of the ducts outside the thermal envelope are recommended, the work scope must include pre and post-installation blower door tests.
- Whenever blower door tests are required, the results must be compared to the Building Airflow Standard to verify compliance with ASHRAE 62-89 requirements for ventilation. If natural ventilation is inadequate according to the ASHRAE standard, mechanical ventilation must be installed as part of the work scope to increase the ventilation to required levels.
- A preliminary and post-installation safety inspection of all combustion appliances must be completed whenever changes to the building envelope and/or heating system are part of the work scope.
- The combustion appliance safety inspection includes all of the following: carbon monoxide test, draft measurement, spillage evaluation, and worst-case depressurization of the combustion appliance zone.
- Combustion safety test results must be acted upon appropriately according to the Combustion Safety Action Level Table.
- Whenever an appliance fails any of the combustion safety test, appropriate repairs must be specified in the work scope according to the requirements listed.
- Appropriate inspection and diagnostic tests must be recommended when attic insulation and/or ventilation are part of the work scope.
- Whenever air sealing is recommended, leakage paths to the attic must be given highest priority on the work scope.

Building Performance Institute

Technical Standards

for Certified Auditors (Technician I)

Health and Safety

All technicians performing diagnostics, inspections, or installations, must have access to all necessary personal safety equipment required by OSHA. Technicians must be trained in proper use and applications for these devices and must adhere to OSHA regulations when on the job site.

All hand tools, power tools, and diagnostic equipment must be handled and used in a safe manner and kept in good working condition. Equipment and diagnostic tools must be maintained and calibrated according to manufacturer's specifications.

A copy of the Material Safety Data Sheets (MSDS) for all materials used on the job and installed in the home, must be kept on each crew vehicle and made available to all workers and clients upon request.

Where the presence of asbestos, lead and/or other hazardous material is suspected, all relevant state and federal (EPA) guidelines must be followed to ensure technician and occupant safety. Blower door depressurization tests may not be performed in homes where there is a risk of asbestos becoming airborne and being drawn into the dwelling.

Respirators with filter cartridges must be worn when working in areas where exposure to airborne mold, asbestos, lead, fiberglass, or formaldehyde is a risk.

Refer to standards on combustion safety for requirements applicable to carbon monoxide exposure.

need certified Auditors (Tech I) on staff. One way to do this and meet BPI standards is to have the Tech II Specialist in the firm perform all the diagnostic tests and inspections in addition to overseeing the jobs.

Some companies find it worthwhile to have certified Auditors on their sales staff who are capable of performing whole building audits as part of their sales technique. Another option would be to have the installation crew chief certified at the Auditor level so they are able to carry out the diagnostic tests and inspections at the time of the installation of improvements to the home so the Tech II on staff is not required to be present on every job site.

The model an accredited firm follows will depend on the number of staff they have, the availability of diagnostic equipment, and the consumer expectations for their region.

How to use this guide

The standards presented here are based on the best practices for home performance diagnostics and installations available at this time. These practices are based on current technologies and scientific understanding of buildings and how they interact with the environment and the humans who occupy them. This guide is a living document that is intended to change and grow as building science research and experience teach us new practices and techniques.

Health and safety is, above all, the most important component of the work a building performance contractor undertakes. Standards that are directly related to the health and safety of the building and its occupants must take precedence over any other standard. These include all standards relating to combustion appliance safety tests and indoor air quality. Refer to the minimum health and safety requirements at the beginning of each set of standards for a list of the tests and inspections that are required at each level of certification.

The information presented here is not a guide to **building code** compliance, nor is it the intention of this set of standards to supercede code. BPI's standards and practices are based on the most current building science applications available to our industry. Due to the wide variance in building codes development and enforcement from region to region, it is not possible for BPI to comprehensively address code issues. It is expected that the contractor will be familiar with all applicable codes and adhere to them. Building codes, as interpreted by local jurisdiction, will take precedence over any of the standards presented here.

Technician II level certifications, designed for crew chiefs and managers, cover advanced inspection and diagnostic skills in a particular trade. Candidates successfully completing the requirements for Technician II earn the designation of **Specialist** for their particular trade.

Technician III level certification is for individuals who seek recognition for their combined experience, knowledge, and skills in building performance practice. This level of certification requires a minimum of two Technician II certifications and two years experience of building performance practice. The practical test for Technician III level certification requires the completion of a fully documented "master work" which is subject to a peer review panel made up of members of BPI's technical advisory committee. There is no written test requirement apart from the master work report. Candidates may be required to defend their work by answering questions issued by the review panel. Grading of the master work presentation is based on a pass/fail judgment of the review panel. Candidates successfully completing the requirements for Technician III level certification earn the title of **Master Building Analyst**.

Business Models for Certified Contractors

The certifications provided by BPI are designed to fit within a variety of contractor business models. The only certification requirement for BPI accreditation is that at least one member of the accredited organization hold a valid Technician II (Specialist) level certification and that this individual oversee the work that is done within the company under the banner of BPI. It is up to each individual firm to determine if additional certified personnel can enhance the delivery of their services to consumers.

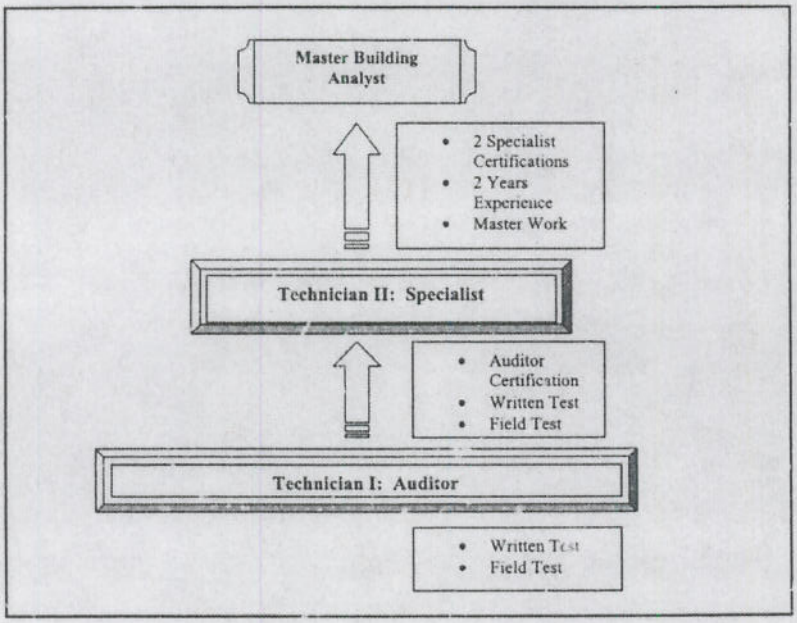
It is important to note that diagnostic tests are usually required in conjunction with installations. If you are not planning on installing a particular measure in a home, you may not be required to complete the full battery of tests. For instance, blower door tests are required whenever air sealing and certain insulation measures are installed. However, if you are a heating contractor installing a new boiler, you wouldn't be required to do a blower door test unless air sealing was also being installed. Read the standards carefully to understand when tests are a required and when they are not.

In addition, it is up to each individual company to determine *when* to perform these tests. Some companies find it helpful to use the diagnostic tests as a sales tool and perform them at the time of the initial audit and estimate. In this case, the company would typically charge an audit fee to the customer, which may be deductible from the cost of any installation work that is completed. Other companies find it is more effective to incorporate the diagnostic tests into the installation bid and adjust the cost accordingly to cover the additional time and labor.

While some private companies employ personnel whose function is to perform building audits, most contracting firms do not. Building contractors may find that they do not

BPI Certification Structure

BPI certifications are earned upon successful completion of a written, *knowledge-based*, test and a field, *performance-based*, test. Written tests consist of 31 multiple-choice questions. Performance tests are administered at a pre-selected sample home or on an active job site. BPI proctors oversee the candidate as he or she performs a series of diagnostic tests and documents inspection results for the test building. Candidates are graded on a pass/fail basis for each component of the field test.



BPI Contractor Certification Structure

Certifications for contractors are structured into three levels. The first level (Technician I) of certification covers a broad base of whole house auditing skills. Candidates successfully completing the requirements for Technician I earn the designation of **Auditor.**

Technician I certification is a pre-requisite for Technician II.

Building Performance Institute

Technical Standards

for Certified Technicians

About the Building Performance Institute

The Building Performance Institute is a national resource center promoting building science practice in the residential contracting trades. The Institute was originally conceived in 1993 by a group of building trade, product manufacturer, and public program professionals whose vision was to create a resource for independent, third-party verification of worker skills in the weatherization industry and building trades. In 1996, the first certifications were issued for weatherization auditors and installation personnel. Since that time, BPI offerings have expanded to include heating technician, large boiler plant technician and carbon monoxide analyst designations.

Presently, the Institute is continuing its mission to promote excellence in residential contracting, via the creation of a new set of certifications developed to better serve the needs of contractors in the traditional residential building trades including remodelers, insulation contractors and heating and cooling contractors.

BPI, assisted by a team of national experts in building science, has established the technical standards presented here as a guide for trade professionals to ensure the efficiency and durability of the buildings they work on and the comfort and safety of the people who live in them. BPI provides certifications for technicians demonstrating competency in the knowledge and skills necessary to inspect, diagnose, and trouble-shoot building performance issues.

BPI certification provides third-party assurance to consumers that the contractors they hire understand the complex interactions of building systems and are equipped to effectively identify and mitigate potential problems.

Accreditation:

Any firm employing at least one Technician II Certified Specialist, may apply for corporate accreditation through the Building Performance Institute. In addition to having a current Tech II on staff, accredited firms are required to utilize a BPI approved quality assurance system and provide QA reports to BPI on a semi-annual basis. The QA system and review process ensures that a company is performing to the minimum level set forth in the BPI Technical Standards. A complete listing of the requirements for accreditation is included in the Accreditation Memorandum of Agreement. Accredited firms will receive the following benefits from BPI as part of the base accreditation fee:

- One initial certification ($500 value).
- Annual in-field training with your entire field crew to demonstrate proper installation techniques and instruct installers on health and safety problem indicators.
- A marketing kit providing access to and instructions for use of the BPI logo.
- Semi-annual review of the QA system reports with feedback designed to help you provide the best service possible to your clients.
- Subscription to BPI's quarterly newsletter including updates on recent developments in the building science industry and schedules of upcoming events.
- Listing on BPI's contractor resource list provided to consumers upon request.
- Resource lists for equipment retailers, training centers, and publications related to the building performance industry.
- Periodic discounts on publications and/or periodicals as they become available.
- Access to participating public and utility program incentives.

Fee Schedule:

Accreditation (annual renewal)	Company Size (# of Employees)	Base Fee	Renewal
	1-5	$1200	$800
	6-20	$1500	$1125
	21-50	$2000	$1500
	51+	Call for Quote	Call for Quote
Certification (renewal every 3 years)	Written and Field	$500	$350
	Field Only*	$350	NA

- *Field test may be taken without repeating the written test by heating and cooling specialists seeking additional system type field certification.*
- *Written test may be waived for individuals already holding a current NATE or HERS certification. Call for details.*

Prices are subject to periodic adjustments. Prices are current as of February 2001.

ATTACHMENT A

BUILDING PERFORMANCE INSTITUTE, INC.

Certification Process:

Building Performance Institute certification is available to individuals demonstrating a mastery of specific skills and competencies associated to the application of building science principles to traditional building trade practice. The certification process requires successful completion of both a written *knowledge-based* exam and a field *performance-based* exam. Certifications are currently offered at the following levels:

- **Technician I: Auditor**
  The auditor level certification is the first step toward becoming a BPI certified Specialist. Required competencies cover a broad base of introductory science concepts, auditing skills, and basic building performance diagnostic skills. This level is ideal for an individual who is new to the building trades or for those whose primary work consists of field-based sales and estimates. *Technician I certification is a pre-requisite for Technician II level certifications*

- **Technician II: Shell Specialist**
  The Shell Specialist is an appropriate certification for a crew chief or manager of an insulation or remodeling company. Required competencies build off of those already established in the Technician I certification. Installation practices for insulation and air sealing, specification of mechanical ventilation systems, and advanced building envelope diagnostic skills are included in this certification.

- **Technician II: Heating and Cooling Specialist**
  The Heating and Cooling Specialist is an appropriate certification for a crew chief or manager of an HVAC or heating and plumbing business. Required competencies build off of those already established in the Technician I certification. Inspection and verification of safe and efficient operation of heating and cooling systems, specification of new or replacement systems, and duct diagnostic skills are included in this certification. Heating and Cooling Specialists choose a type of system (by fuel and distribution type) they wish to be tested on during the field evaluation. The certification is issued specifying the type of system selected. Field tests on additional heating or cooling systems can be arranged at an additional charge and will be included on the certification.

Certification fees cover the cost of the written and field exams as well as:

- National recognition of your skills and capabilities as a building performance professional.
- A copy of the BPI Technical Standards for the relevant certification level and discipline.
- A certificate and ID card identifying you as a BPI certified technician.
- Updates of the BPI Technical Standards as they become available.
- Laminated quick-reference sheets for building airflow calculations and combustion safety action levels.
- Eligibility to deliver services for participating public and utility programs.

Based on early recruiting efforts, it is anticipated that the following individuals will be available to serve on the Technical Advisory Council. The individuals named have provided assistance in the development of the draft standards currently in use and have expressed interest in continued participation in this process. It is BPI's goal to add at least one more person to participate in the technical standards development in addition to Courtney Moriarta and Jim Fitzgerald. The final draft of the documents will be distributed for a public review and comment period of not less than thirty days, prior to finalization.

Technical Advisory Committee Participants:

- Rob DeKieffer, Boulder Design Alliance, Boulder, CO
- Gary Nelson, Energy Conservatory, Minneapolis, MN
- Bruce Davis, Advanced Energy Corporation, Raleigh NC

The sub-contractor for website development is Mercury Solutions, Inc. located in Albany, NY.

Resumes for project principles and sub-contractor qualifications are included in **Attachment G.**

Timeline:

The projected timeline for each component of the work plan is shown in **Attachment E**. Assuming a start date of July 1, 2001, the project tasks should be completed by July 1, 2001 with final reporting completed by November 1, 2002.

Budget:

This grant represents part of a larger project for continued development of comprehensive certification services for the building performance contracting industry. The proposed EPA contribution to the overall budget for fiscal year 2001-2002 is $39,975.34. A summary budget and breakdown of the estimated costs for each task is presented in **Attachment F**.

Project Participants:

The Project Manager is Courtney Moriarta, Executive Director of the Building Performance Institute. Ms. Moriarta has Bachelor of Science Degrees from the Massachusetts Institute of Technology in Civil Engineering and Building Technology She has worked in the building science and residential energy efficiency industry since 1993. Her work includes 8 years experience with Conservation Services Group, Inc. in Westborough, MA. She has worked virtually in all aspects of the industry including field auditor, project manager, trainer, and technical consultant. She joined the Building Performance Institute in November 2000.

Jim Fitzgerald is the President of the Building Performance Institute and will serve as chairman of the Technical Advisory Committee. Mr. Fitzgerald is known throughout North America for his expertise in training weatherization crews for numerous agencies and utilities in over 35 states and Canada. Since 1998 he has been the Technical Director of the Center for Energy and Environment's Indoor Air Quality (IAQ) Testing and Remediation group for the MAC Part 150 Residential Sound Insulation Program that has served more than 6000 houses.

John Jennings, Technical Director of Conservation Services Group, Inc. of Albany, NY will provide the proctoring of certification and accreditation evaluations for the contracting firms participating in the pilot group. Mr. Jennings has worked in the residential energy conservation field since 1980 in various capacities ranging from auditor to Field Manager and Technical Director. He is currently assisting the Building Performance Institute in providing certifications and accreditations to contractors participating in the Home Performance with ENERGY STAR program in New York. He also provides training and quality assurance for that program.

help to broaden the project to include a wider audience and complement the emerging standards for private-market contractor certifications. In addition, NYSERDA has proposed supplemental funding for this project contingent up on receipt of the proposed EPA grant. Ultimately, it is BPI's goal to continue work on this project to provide best practices for all climate regions in the U.S.

Production of a Field Guide of best practices is a vital supporting function of BPI for its certification. Guidance for proper applications of building performance tests and building science principals to the work contractors do is an essential component to ensuring a high quality of work in practice after certification. This guide may also be used by training providers as a supporting text while preparing candidates for certification.

Task III Products: *Revised Cold Climate Field Guide Text*
Published and Printed Field Guide

IV. *Development of BPI Website*

Creation of an internet website for the Building Performance Institute is a vital component of the infrastructure needed to promote certifications and accreditations on a national scale. Once established, this website will serve as the primary vehicle for distributing technical standards documents and guidance on acquiring the skills needed for certification

In addition to serving as a clearinghouse for resources for contractors seeking to expand their knowledge and experience, a consumer section of the site will provide information on how to select a contractor and what to expect when a home is performance tested. A list of accredited contractors with links to their websites will help the contractors promote their business and assist consumers in selecting an appropriate contractor.

Development of this website is a necessary component of the communications network needed to deliver certifications and provide consumer and contractor support nationwide. This site will not only serve as a resource for certification candidates but will also provide a significant marketing resource for promoting building performance and the benefits of BPI certification.

A preliminary map of the proposed website is illustrated in **Attachment D**.

Task IV Products: *Operating BPI Website Including:*
Resources for Contractors
Resources for Consumers
Listing of Certified Contractors

Delivery of this task includes two meetings of the Technical Advisory Council (4 members), the Committee Chairman, and the Project Manager. The first meeting, held early in the project, includes review of the existing documents and development of a work plan to revise and expand the scope of the standards. A writing and review period follows, culminating in a second meeting for final review of the new work. The final phase of this task includes publication and printing of the new documents. Since the committee will consist of individuals from several locations across the country, meeting sites will be chosen to best accommodate the travel requirements for all involved. Possible sites include the Center for Energy and Environment in Minneapolis, MN and the BPI office in Albany, NY.

Completion of this task will result in development of a comprehensive and effective set of technical standards that ensures a high quality of work from BPI accredited contractors. Furthermore, by assembling a group of national experts in building science and trades to participate in this cooperative effort, BPI will be establishing a broad base of support for its certification efforts across the country.

In addition to the proposed EPA grant, the New York State Energy Research and Development Authority (NYSERDA) has offered supplemental funding for this project. Continued work on this project may include the creation of standards for additional certification disciplines such as specialists in Cooling, Multi-family, Indoor Air Quality, New Construction, etc.

Task II Products:

2 Technical Advisory Committee Meetings
Revisions of Technical Standards for:
Technician I: Auditor
Shell Specialist
Heating Specialist

III. *Revision of BPI Field Guide*

The existing Field Guide was developed by BPI to establish standards and best practices for the weatherization industry. While this book still serves the needs of many weatherization efforts, it is in need of updating. In addition, BPI's goal is to revise this guide to serve the dual purpose of providing guidance to both weatherization personnel and private market contracting firms on a national scale. This revision will focus on providing a solid set of best practices for all building performance technicians, diagnosticians, and installers. The existing Field Guide is provided as **Attachment C**.

This project is already underway with resources committed to the project by the Indiana Community Action Association (INCAA) to update the Field Guide for use in the state of Indiana. Additional funding from EPA for this effort would

Work Plan:

The work performed under this project includes the following tasks:

I. *Accreditation of Contracting Firms in Pilot Regions*
This component of the project would include the certification of technicians and accreditation of 2-4 contracting firms in targeted regions where publicly funded initiatives are not available for the promotion of building performance contracting. The locations for the pilot accreditation events will be selected jointly by the EPA and BPI. Certification and accreditation would be completed according to the most recent BPI Technical Standards (see Task II) as well as the accreditation process and fee structure identified in **Attachment A**.

The completion of this task and subsequent feedback and reporting from the participating contractors will provide baseline data on the benefits and/or drawbacks to: the certification process; the practicality of promoting and implementing building performance contract work; and the feasibility of creating a market for this industry without program support. This data will provide a valuable counterpoint to the publicly funded pilot initiatives that are currently underway in New York and in the planning stages in Wisconsin.

Task I Products: *3 Pilot Accreditations*
Evaluation Report

II. *Continued Development of BPI Technical Standards*
The Technical Standards provide the basis for certification examinations and the performance standards for accredited firms. It is BPI's goal to establish a broad-based team of national experts to assist in the continued development of these standards and to expand the standards to include the various climate regions that exist across the U.S. A draft version of the Technical Standards for Technician I: Auditor, Technician II: Shell Specialist, and Technician II: Heating Specialist is included as **Attachment B**.

A number of leading building science professionals and building trades advocates have expressed interest in participating in this effort, however limited funding makes it difficult for BPI to compensate these individuals for their work and travel expenses. A small fund to establish an Advisory Council for the Technical Committee would assist BPI in ensuring a high quality of work and timely delivery of standards.

The initial funding for this project has been provided by the New York State Energy Research and Development Authority (NYSERDA) as part of a pilot program, Home Performance with ENERGY STAR, to promote and establish the building performance industry in New York State. The success of the initial phase of this initiative has generated interest in the Building Performance Institute and the certification and accreditation process on a national level. It is BPI's goal to be able to provide this service on a national scale, however, additional infrastructure is required before the Insititute will be able to effectively meet this demand

Additional funding from the EPA would assist the Institute in continuing the process of Technical Standards development, an update and revision of our "best practices" Field Guide, and to broaden its capacity for delivery of services in regions outside of New York Sate via the creation of an internet website and by providing certification and accreditation services to a sample of targeted pilot regions outside of New York.

Primary Objective: Complete certification and accreditation of a sample set of contracting firms in targeted regions that are not beneficiaries of publicly funded initiatives. This pilot project would include follow-up reports to identify and track the benefits of these credentials to the contractor's business.

Secondary Objective: Continued development of infrastructure required to deliver certifications and accreditation of building performance contracting firms on a national scale.

EPA Grant Proposal

About the Building Performance Institute:

The Building Performance Institute is a national resource center promoting building science practice in the residential contracting trades. The Institute was originally conceived in 1993 by a group of building trade, product manufacturer, and public program professionals whose vision was to create a resource for independent, third-party verification of worker skills in the weatherization industry and building trades.

Presently, the Institute is continuing its mission to promote excellence in residential contracting, via the creation of a new set of certifications developed to better serve the needs of contractors in the traditional residential building trades including remodelers, insulation contractors and heating and cooling contractors.

BPI, assisted by a team of national experts in building science, has established a draft set of technical standards as a guide for trade professionals to ensure the efficiency and durability of the buildings they work on and the comfort and safety of the people who live in them. BPI provides certifications for technicians demonstrating competency in the knowledge and skills necessary to inspect, diagnose, and trouble-shoot building performance issues.

BPI certification provides third-party assurance to consumers that the contractors they hire understand the complex interactions of building systems and are equipped to effectively identify and mitigate potential problems.

Description of Project:

The trades-based certifications and accreditation process for building performance contracting firms is a new challenge for BPI. Building science practice and performance testing of buildings has been utilized in public programs, utility funded demand-side management efforts, and to a limited extent, in private consulting firms for well over a decade now. However, the traditional contracting trades have yet to embrace the techniques and principles of performance testing and a whole-house approach to improving existing homes.

The ENERGY STAR™ Homes program has made great progress in promoting building science principles in new construction, but the resources available to home improvement contracting trades have typically been limited and short-lived. It is BPI's mission to promote change in these industries by providing nationally recognized third-party standards and quality control mechanisms for improvements installed in existing homes. The whole-house approach endorsed by BPI is designed to promote energy efficiency and to protect the health and safety and comfort of the occupants at the same time.

EPA

Washington, DC 20460

Preaward Compliance Review Report for All Applicants Requesting Federal Financial Assistance

FORM Approved
OMB No. 2090-0014
Expires 4-30-99

Note: Read instructions before completing form.

I. A. Applicant (Name, City, State)	B. Recipient (Name, City, State)	C. EPA Project No.
BUILDING PERFORMANCE INSTITUTE ALBANY, NY	SAME	

II. Brief description of proposed project, program or activity.
DEVELOPMENT OF INFRASTRUCTURE FOR PROMOTION AND DELIVERY OF BUILDING PERFORMANCE CERTIFICATIONS.

III. Are any civil rights lawsuits or complaints pending against applicant and/or recipient? If yes, list those complaints and the disposition of each complaint.	☐ Yes ☒ No
IV. Have any civil rights compliance reviews of the applicant and/or recipient been conducted by any Federal agency during the two years prior to this application for activities which would receive EPA assistance? If yes, list those compliance reviews and status of each review.	☐ Yes ☒ No
V. Is any other Federal financial assistance being applied for or is any other Federal financial assistance being applied to any portion of this project, program or activity? If yes, list the other Federal Agency(s), describe the associated work and the dollar amount of assistance.	☐ Yes ☒ No

VI. If entire community under the applicant's jurisdiction is not served under the existing facilities/services, or will not be served under the proposed plan, give reasons why.

VII. Population Characteristics		Number of People
1.	A. Population of Entire Service Area	
	B. Minority Population of Entire Service Area	
2.	A. Population Currently Being Served	
	B. Minority Population Currently Being Served	
3.	A. Population to be Served by Project, Program or Activity	
	B. Minority Population to be Served by Project, Program or Activity	
4.	A. Population to Remain Without Service	
	B. Minority Population to Remain Without Service	

VIII. Will all new facilities or alterations to existing facilities financed by these funds be designed and constructed to be readily accessible to and usable by handicapped persons? If no, explain how a regulatory exception (40 CFR 7.70) applies. ☐ Yes ☐ No
NOT APPLICABLE

IX. Give the schedule for future projects, programs or activities (or of future plans), by which services will be provided to all beneficiaries within applicant's jurisdiction. If there is no schedule, explain why.
CONTINUED DEVELOPMENT OF STANDARDS FOR BROADER RANGE OF CERTIFICATION ACTIVITIES IN VARIOUS BUILDING TRADE DISCIPLINES. CONTINUED OUTREACH TO PROMOTE CERTIFICATIONS TO WEATHERIZATION AGENCIES AND PRIVATE CONTRACTORS NATIONWIDE.

X. I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

A. Signature of Authorized Official	B. Title of Authorized Official	C. Date
Courtney Moriarta	EXECUTIVE DIRECTOR	5/18/01

For the U.S. Environmental Protection Agency

☐ Approved ☐ Disapproved	Authorized EPA Official	Date

EPA Form 4700-4 (Rev. 1/90) Previous editions are obsolete.

EPA Project Control Number

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

COURTNEY MORIARTA, EXECUTIVE DIRECTOR
Typed Name & Title of Authorized Representative

Courtney Moriarta 5-18-01
Signature of Authorized Representative Date

EPA

EPA Project Control Number

United States Environmental Protection Agency
Washington, DC 20460

Certification Regarding
Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(C) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

COURTNEY MORIARTA EXECUTIVE DIRECTOR
Typed Name & Title of Authorized Representative

Courtney Moriarta 5/18/01
Signature of Authorized Representative Date

☐ I am unable to certify to the above statements. My explanation is attached.

EPA Form 5700 49 (11-88)

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Courtney Moriarty	EXECUTIVE DIRECTOR
APPLICANT ORGANIZATION	DATE SUBMITTED
BUILDING PERFORMANCE INSTITUTE	5/18/01

Standard Form 424B (Rev. 7-97) Back

OMB Approval No. 0348-0040

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all [illegible] statutes relating to nondiscrimination. The[illegible]e but are not limited to: (a) Title VI of the Civil Rig[illegible]ct of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.	$	$	$	$
9.				
10.				
11.				
12. TOTAL *(sum of lines 8-11)*	$	$	$	$

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$	$	$	$	$
14. Non-Federal					
15. TOTAL *(sum of lines 13 and 14)*	$	$	$	$	$

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16.	$	$	$	$
17.				
8.				
9.				
0. TOTAL *(sum of lines 16-19)*	$	$	$	$

SECTION F - OTHER BUDGET INFORMATION

1. Direct Charges: $ 38,331.72

22. Indirect Charges: $1,643.62

3. Remarks:

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BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		$	$	$	$	$
2.						
3.						
4.						
5. Totals		$	$	$	$	$

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total
	(1) Pilot Accreditation	(2) Tech. Standards	(3) Field Guide	(4) Website	(5)
a. Personnel	$ 1,227.00	$ 1,858.00	$ 3,486.00	$ 900.00	$ 7,471.00
b. Fringe Benefits	392.64	594.56	1115.52	288.00	2,390.72
c. Travel	2,100.00	5,000.00	ϕ	ϕ	7,100.00
d. Equipment	ϕ	ϕ	ϕ	ϕ	ϕ
e. Supplies	225.00	175.00	150.00	100.00	650.00
f. Contractual	2,520.00	15,500.00	ϕ	2,700.00	20,720.00
g. Construction	ϕ	ϕ	ϕ	ϕ	ϕ
h. Other	ϕ	ϕ	ϕ	ϕ	ϕ
i. Total Direct Charges *(sum of 6a-6h)*	6,464.64	23,127.56	4,751.52	3,988.00	38,331.72
j. Indirect Charges	269.94	408.76	766.92	198.00	1,643.62
k. TOTALS *(sum of 6i and 6j)*	$ 6,734.58	$ 23,536.32	$ 5,518.44	$ 4,186.00	$ 39,975.34
7. Program Income	$ ϕ	$ ϕ	$ ϕ	$ ϕ	$ ϕ

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Standard Form 424A (Rev. 7-97)
Prescribed by OMB Circular A-102

BUILDING PERFORMANCE INSTITUTE, INC.

Phone: (518) 207-4545
Fax: (518) 207-4550

126 State Street
Third Floor
Albany, NY 12207

GRANT PROPOSAL

Building Performance Certification Development Project

Submitted to:

United States Environmental Protection Agency
1200 Pennsylvania Avenue
Washington, DC 20004

Submitted by:

Building Performance Institute, Inc.
126 State Street, Third Floor
Albany, NY 12207

May 18, 2001

Corporate Headquarters
505 Eighth Avenue • Suite 1801 • New York, NY 10018
Phone: (212) 279-9708

BUILDING PERFORMANCE INSTITUTE, INC.

Phone: (518) 207-4545
Fax: (518) 207-4550

126 State Street
Third Floor
Albany, NY 12207

May 18, 2001

Lena Nirk (6202J)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, D.C. 20004

Dear Ms. Nirk:

The enclosed proposal for funding for the Building Performance Certification Development Project has been prepared by the Building Performance Institute. This project is designed to promote energy-efficient, healthy, and safe installation practices among home improvement contractors. It is part of BPI's on-going commitment to promoting high standards and best practices among the building trades.

We are grateful to the EPA for the opportunity to enhance our infrastructure to enable us to provide nationwide certification services.

Please do not hesitate to call me if you have any questions. My direct line is (518) 207-4505.

Sincerely,

Courtney Moriarta
Executive Director

Corporate Headquarters
505 Eighth Avenue • Suite 1801 • New York, NY 10018
Phone: (212) 279-9708

APPLICATION FOR FEDERAL ASSISTANCE

OMB Approval No. 0348 00

2. DATE SUBMITTED	Applicant Identifier
5/18/01	
3. DATE RECEIVED BY STATE	**State Application Identifier**
4. DATE RECEIVED BY FEDERAL AGENCY	**Federal Identifier** 8293440610

1. TYPE OF SUBMISSION:
Application: ☐ Construction ☒ Non-Construction
Preapplication: ☐ Construction ☐ Non-Construction

5. APPLICANT INFORMATION

Legal Name:	Organizational Unit:
BUILDING PERFORMANCE INSTITUTE, INC.	
Address (give city, county, State, and zip code): 126 STATE STREET, THIRD FLOOR, ALBANY, NY 12207	Name and telephone number of person to be contacted on matters involving this application (give area code): COURTNEY MORIARTA (518) 207-4505

6. EMPLOYER IDENTIFICATION NUMBER (EIN): 14-1789014

7. TYPE OF APPLICANT: (enter appropriate letter in box) N

A. State
B. County
C. Municipal
D. Township
E. Interstate
F. Intermunicipal
G. Special District
H. Independent School Dist.
I. State Controlled Institution of Higher Learning
J. Private University
K. Indian Tribe
L. Individual
M. Profit Organization
N. Other (Specify) NON-PROFIT

8. TYPE OF APPLICATION:
☒ New ☐ Continuation ☐ Revision
If Revision, enter appropriate letter(s) in box(es) ☐ ☐
A. Increase Award B. Decrease Award C. Increase Duration
D. Decrease Duration Other(specify):

9. NAME OF FEDERAL AGENCY:
ENVIRONMENTAL PROTECTION AGENCY

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 66-606
TITLE:

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:
BUILDING PERFORMANCE CERTIFICATION DEVELOPMENT

12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.):
NATIONWIDE

13. PROPOSED PROJECT
Start Date: 7/1/01 Ending Date: 11/1/02

14. CONGRESSIONAL DISTRICTS OF:
a. Applicant 21st - NEW YORK
b. Project NATIONWIDE

RECEIVED 01 JUL 23 PM 3 ADMINISTRATION

15. ESTIMATED FUNDING:

a. Federal	$ 39,975
b. Applicant	$
c. State	$
d. Local	$
e. Other	$
f. Program Income	$
g. TOTAL	$ 39,975

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?
a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:
DATE _____
b. No. ☐ PROGRAM IS NOT COVERED BY E. O. 12372
☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
☐ Yes If "Yes," attach an explanation. ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Type Name of Authorized Representative	b. Title	c. Telephone Number
COURTNEY MORIARTA	EXECUTIVE DIRECTOR	518-207-4505
d. Signature of Authorized Representative		**e. Date Signed**
Courtney Moriarta		5/18/01

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Standard Form 424 (Rev. 7-97)
Prescribed by OMB Circular A-102

APPLICATION REVIEW SHEET - I.D. NUMBER: CR829344-01-0

Forms/Certification Review:

	Yes	No	N/A
Eligible Applicant Statute(s) CAA	✓		
501(c)(4) Organization That Lobbies		✓	
SF 424 With Original Signature	✓		
SF 424B Assurances With Signature	✓		
*Suspension/Debarment Certification	✓		
Lobbying Certification (if over 100K)			✓
E.O. 12372 Intergov. Review Required	✓		
Civil Rights Form (EPA Form 4700-4)		✓	
Application Solicited		✓	

Narrative Review

	Yes	No	N/A
Statement of Work Included	✓		
Meets Requirements of Fed. Grant & Coop. Agreement Act and EPA Order 5700.1	✓		
Biographical Sketch Included	✓		
Human Subjects Indicated		✓	
Animal Subjects Indicated		✓	
Proprietary Information Indicated		✓	
Deviation Requested		✓	
Foreign Award/Activity Indicated		✓	

Budget Review

	Yes	No	N/A
Budget Period/Project Period Allowable	✓		
Itemized Budget Provided	✓		
Unallowable Costs Indicated (see notes)		✓	
IDC Rate Established (Rate____Base____)		✓	
Contractual or Consultant Costs Indicated	✓		
Printing Costs Indicated		✓	
Meets Cost Share Req. (Recip___%Fed 100%)	✓		
Conference/Workshop Indicated		✓	
Pieces of Equipment/Supplies Over $5000		✓	

Notes/TiCs/Items Needed: Need IDC rate

Reviewed By: R Phillips Date: 9/14/01

Sent To:

*May be satisfied by annual certifications.
Application Review Sheet Date: 2/98

New

TOP

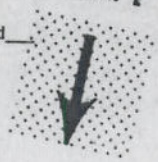
SECTION 2

(White)

GRANT NO. X829344-01-0 DATE 9/18/01

- ENERGY Related or OVER $1M/Copy to Betty M.
- SMALL GRANT
- Correct Decision Official/Del of Auth.
- PO Training/Monitoring Form
- Cost Sharing/Partial Funding
- 501 (c)(4) TC & Status
- Lobbying/Litigation TC
- DBE/MBE TC & Attachment
- Civil Rights Form
- Prevalidation/Freezing
- Multiple PRC Codes/Allocation Meth.
- Statutory Authority/Regulatory Auth
- CFDA (CP 66.463/CH 66.609/NE 66.951)
- Object Class
- Mixed Appropriation Justification/Alloc Meth
- SRO Approval over $
- Dec M[illegible] Act/Comm[illegible]od
- Quality Assurance/TC added
- Reviews/Negativ[illegible] Comments Addressed
- Foreign - OIA Approval/Fly America
- FDP/Deviation
- Debt Collection TC/ACH TC
- Conference Questionnaire
- Program Income - Add
- EPA In-Kind in Budget/TC added
- Consultants TC
- No Feds TC
- Copyright TC
- Prompt Payment TC
- FSR TC
- IDC negotiated or TC added
- Research Misconduct
- State Recipient/TCs Added
- Progress Reports (OW #19)
- Final Report
- Human Subjects/ORD Approval
- Animal Subjects
- Deviation for Extension (Res & Tng)
- Minority Issue - Ken Redden (OGC)
- Computer Models Questionnaire
- PRA/ICR Issue - Barbara Pace (OGC)

INITIAL HERE



Copy Sent 9/18/01

Stat. Auth. - How does work relate to Stat. Auth.

This should be coop.

Need latest version of website Q's which address copyright issues.

FEA? NO

Do they need this Start Date? NO

TC 5 - this is not more than 90 days.

Del TC 8+4 - repeat of TCs 3+4

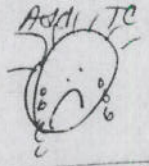
Add TC re IDC

Prog TC 12 typo

Add TC 19

9/25 Renumber TCs

Add TC re IDC



9/25 Add TC re Consultants

Copyright TC?

Renumber TCs

Yes ___ No_x__

If yes, it is EPA policy for the Grants Administration Division to insert the condition below into the assistance agreement. If this condition is not appropriate for this project, please provide alternative language:

In accordance with 40 CFR 31.34 for State, local and Indian Tribal governments or 40 CFR 30.36 for other recipients, EPA has the right to reproduce, publish, use, and authorize others to use copyrighted works developed under this assistance agreement for Federal purposes. Examples of Federal purpose include but are not limited to: (1) Use by EPA and other Federal employees for official Government purposes; (2) Use by Federal contractors performing specific tasks for the Government; (3) Publication in EPA documents provided the document does not disclose trade secrets (e.g. software codes) and the work is properly attributed to the recipient through citation or otherwise; (4) Reproduction of documents for inclusion in Federal depositories; (5) Use by State, tribal and local governments that carry out delegated Federal environmental programs as "co-regulators" or act as official partners with EPA to carry out a national environmental program within their jurisdiction; (6) Limited use by other grantees to carry out Federal grants provided the use is consistent with the terms of EPA's authorization to the grantee to use the copyrighted material.

Lena Nirk — 9/20/2001

PO's Signature — Date

for building performance contractors.

5. Will the recipient use assistance funds to provide advice to EPA or another Federal Agency? Does the project support activities of any Federal Advisory Committee set up to advise the Federal government under the Federal Advisory Committee Act (FACA)? If applicable, confer with OGC.

NA

6. If this project involves development of a web site, will it be available for the public to access? If so, where will it be located? Please provide the web site address.

Although the primary audience is contractors, the public will be able to access the site. The site has not been developed yet.

7 If the project involves development of a web site, who will maintain it during and after the project

The Building Performance Institute will maintain the site.

8. Will a fee be charged to access the web site during the project period? If yes, the program income should be:

No

___ Used to support additional eligible project activities

___ Used to meet the recipient's cost sharing requirement

___ Deducted from total costs to determine net allowable project costs

9. Is it anticipated that the recipient will develop and copyright software or written material?

SOFTWARE/MODELING/WEB SITES
QUESTIONS TO DETERMINE
ASSISTANCE VS ACQUISITION

Recipient Name: Building performance Institute

Assistance Agreement Number: _____

This application is being reviewed to determine if assistance is the appropriate funding mechanism. Please review the Scope of Work/Decision Memorandum to address the following:

1. How is the work primarily benefitting the recipient and the public? How does it support the recipient's mission?

The BPI work to develop the infrastructure for promotion and delivery of building performance certifications will help to raise the capability of the industry to provide services to the public to improve the energy efficiency of the residential building stock. More energy efficient homes will reduce greenhouse gas emissions and that will benefit the public.

2. Who are the models being developed for under the project? Who will use them?

No models are being developed.

3. Who will the model or other products be delivered to at the end of the grant?

NA

4. How is the information being disseminated to the public? Who is the primary audience?

The technical standards documents and guidance will be distributed through a website. The website will also serve as a technical clearinghouse for resources for contractors seeking to expand their knowledge and for consumers looking

PEER REVIEW

MEMORANDUM

SUBJECT: Review of Assistance Agreement: Building Performance Institute, Incorporated Certification and Accreditation Program.

DATE: June 1, 2001

FROM: Doug Anderson Douglas W. Anderson

TO: Lena Nirk

I. OBJECTIVE

This Building Performance Institute (BPI) promotes energy and resource efficiency, comfort, and safety, in existing housing. BPI has developed a respected reputation through its certification of DOE Weatherization contractors. Their draft technical standards and certification and accreditation process have also formed a cornerstone of the "Home Performance with ENERGY STAR" pilot in the state of New York. These concepts are in line with some of the goals of the Home Improvement Program as well as the New Homes Program. Furthermore, an established certification and accreditation program for residential energy-efficiency contractors would facilitate the expansion of whole-house market transformation efforts in many areas around the country. This certification and accreditation program will further EPA goals of energy conservation and resultant greenhouse gas emission abatement in the existing residential sector.

II EXPLANATION OF ANY APPARENT DUPLICATIVE OR EXCESSIVE EFFORT

None that I am aware of.

III STRENGTHS AND WEAKNESSES OF PROPOSAL

The BPI technical standards appear to be high-quality and well thought-out. Its certification and accreditation processes are currently being refined in New York. Additional standards development and pilot deployments by BPI should accelerate the development of the building performance industry and therefore increase the opportunity for homeowners to increase the energy-efficiency of their homes.

With its experience certifying Weatherization contractors, BPI is well positioned expand into the private sector market. The private sector certification should facilitate market transformation around the country.

IV RECOMMENDATION

I recommend approval of this grant. I have no specific recommendations or modifications to improve the proposed project. The timetable and budget appear commensurate with the tasks.

BPI Incorporated is a 501(c)(3) non-profit organization that researches promotes energy and resource efficiency, comfort, health, safety, affordability in residential buildings. It has been promoting building science practice in the residential contracting trades and providing certification since 1993. The experts participating in the technical standard development ensure a very high level of quality. The success of their certification and accreditation in the New York "Home Performance with ENERGY STAR" pilot demonstrates their ability to perform the proposed work.

IV Recommendation

The applicant is requesting a federal budget of $39,975 for this effort. I recommend funding of this proposal at the requested level.

building trades including remodelers, insulation contractors and heating and cooling contractors. BPI, and a group of national building science experts, have established a draft set of technical standards as a guide for trade professionals to ensure the energy-efficiency and durability of homes they work on and the health, safety, and comfort of the people who live in them. BPI provides certifications for technicians demonstrating competency in the knowledge and skills necessary to inspect, diagnose, and trouble-shoot building performance issues, and is an integral part of the "Home Performance with ENERGY STAR" pilot in New York state.

The success of the initial phase of this initiative has generated interest in the Building Performance Institute and the certification and accreditation process on a national level. It is BPI's goal to be able to provide this service on a national scale; however, additional infrastructure is required before they will be able to effectively meet this demand.

Under this grant and through this conference, BPI proposes:

To refine the technical standards, and the certification and accreditation processes for the residential contractors.

To complete certification and accreditation of a sample set of contracting firms in targeted regions that are not beneficiaries of publicly funded initiatives. This pilot project would include follow-up reports to identify and track the benefits of these credentials to the contractor's business.

To continue development of infrastructure required to deliver certifications and accreditation of building performance contracting firms on a national scale.

To revise the BPI Field Guide to provide a solid set of best practices for all building performance technicians, diagnosticians, and installers.

To create an internet website for the Building Performance Institute to serve as the primary vehicle for distributing technical standards documents and guidance on acquiring the skills needed for certification. A secondary purpose of the website is to serve as a clearinghouse for resources for contractors seeking to expand their knowledge and experience. A consumer section of the site will provide information on how to select a contractor and what to expect when a home is performance tested. In addition, a list of accredited contractors with links to their web sites will help the contractors promote their business and assist consumers in selecting a contractor with whom they will be comfortable.

The BPI contractor certification and accreditation program provides an excellent opportunity to help grow the residential building performance industry. It also provides market transformation programs an easily identifiable link to these qualified professionals and helps ensure the success of whole-house based home improvement programs.

III Review of Technical Qualifications

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

MEMORANDUM

DATE: June 13, 2001

SUBJECT: Technical Review of Building Performance Institute Certification Proposal

FROM: Lena Nix, Project Officer, Climate Protection Partnerships Division

TO: Kathleen Hogan, Director, Climate Protection Partnerships Division

I have reviewed the proposal submitted by the Building Performance Institute, Inc. requesting funding support for the continued development of it contractor certification and accreditation program.

I. Critical Needs Addressed by the Proposal

The objectives of this cooperative agreement coincide with the goals of EPA's Home Improvement Program with ENERGY STAR as well as the New Homes Program which are to reduce energy consumption in the residential sector. Successful implementation of this proposal would lead to greater market penetration of residential energy efficiency products and measures in housing stock in states, as is happening in New York state.

The general public benefits through decreased greenhouse gas emissions. In addition, building professionals benefit through having clearly defined performance standards and a way to demonstrate to home owners that the builder professionals can meet those standards. Home owners benefit through a mechanism to recognize skilled building performance contractors, and through decreased utility bills and improved monthly cash savings.

II Review of Technical Approach

The Building Performance Institute is a national resource center promoting building science practice in the residential contracting trades. For eight years BPI has provided third-party verification of worker skills in the weatherization industry and building trades.

BPI is continuing its mission to promote excellence in residential contracting by creating a new set of certifications developed to better serve the needs of contractors in the traditional residential

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: Executive Summary of Assistance Agreement to Support the Development of Contractor Certification by the Building Performance Institute

DATE: June 13, 2001

FROM: Lena Nirk

THROUGH: Kathleen Hogan, Director
Climate Protection Partnerships Division

TO: Paul Stolpman, Director
Office of Atmospheric Programs

The Building Performance Institute, Inc. (BPI) has submitted a request to fund further development of its building performance contractor certification and accreditation program. This certification is already being piloted as part of New York's "Home Performance with ENERGY STAR" pilot. Quality assurance and certification are key components of the "Home Performance with ENERGY STAR" concept, and BPI is currently the only organization offering such certification.

BPI has requested $39,975 to refine its certification standards and processes, to expand it to include a cooling climate component, and to pilot the use of certification outside of the subsidized New York market. I recommend that you approve this assistance agreement

EPA Project Officer: Lena Nirk	**Mail Code:** 6202-J
Phone: (202) 564-9841	**Fax:** (202)565-2274
Address: 1200 Pennsylvania Ave. NW Washington, DC 20460	
Date Certified: Jan. 1997	**Date Recertified:**
Recommending Official Signature: Dena [illegible] for	
Typed name and Title: Kathleen Hogan, Director, Climate Protection Partnerships Div.	
Date: 7/10/01	
Decision Official Signature: [signature]	**Typed**
Name and Title: Paul Stolpman, Director, Office of Atmospheric Programs	
Date: 7/11/01	